

A

B

Biological Opinion: Document which states the opinion of the U.S. Fish and Wildlife Service as to whether a federal action is likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction or adverse modification of critical habitat.

Biomagnification: The enhancement of a substance (usually a contaminant) in a food web such that the organisms eventually contain higher concentrations of the substance than their food sources.

Bivalve: An animal having two shells.

Borrow: Material excavated from one area to be used as fill material in another area.

C

Calcareous: Resembling calcite or calcium carbonate in hardness; growing on limestone or in soil impregnated with lime.

Cofferdam: A temporary, watertight enclosure around a construction site in a body of water. Water is removed from the cofferdam so that construction work can occur in the dry.

Coliform: Organisms common to the intestinal tract of humans and animals.

Colluvium: Rock and soil accumulated at the foot of a slope.

Colorado Ute Indian Water Rights Final Settlement Agreement, December 10, 1986 (Settlement Agreement): Describes project-reserved water rights for the two Colorado Ute Tribes and details other benefits to the tribes.

Colorado Ute Indian Water Rights Settlement Act of 1988 (Public Law 100-585) (Settlement Act): Enters into law provisions of the Colorado Ute Indian Water Rights Settlement Agreement of 1986 and mandates the Tribal Development Fund and other provisions of the Settlement Agreement.

Commercial Rafting Day: A 24-hour period within the commercial rafting season that commercial rafting is offered as a recreation activity.

Commercial Rafting Season: The period extending from Memorial Day in late May through Labor Day in early September which is assumed for analysis purposes to be the commercial rafting season on the Animas River. The period generally is defined as May 27 through September 5, which results in 102 days in each rafting season.

Commercial User-Day: The participation in commercial rafting during a 24-hour period by one person.

Conservation: Reduction in applied water due to more efficient water use.

Connected Actions: As defined in 40 CFR 1508.25(a)(1), those actions which are inter-related to a proposed federal action and which should be discussed in the same EIS.

Containment Levee: A dike or embankment to contain streamflow.

Cooperating Agency: A cooperating agency may be any federal agency other than the lead agency that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal.

Cretaceous: Having the characteristics of chalk; relating to the Mesozoic era system of rocks.

Critical Habitat: Defined in Section 3(5)(A) of the federal Endangered Species Act as: (1) The specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical and biological features (a) essential to the conservation of the species and (b) which may require special management considerations for protection; and (2) Specific areas outside the geographical area occupied by a species at the time it is listed upon a determination by the Secretary of the Interior that such areas are essential for the conservation of the species.

Cultural Patrimony: Ancestral heritage and entitlement.

Cumulative Action: As defined in 40 CFR 1508.25(a)(2), those actions, when viewed with other proposed actions, that have cumulatively significant impacts.

Cumulative Impact: See also Effects/Impacts. Impacts that occur as a result of cumulative actions.

D

Dead Storage: The reservoir capacity from which stored water cannot be evacuated by gravity.

Depletion: Use of water in a manner that makes it no longer available to other users in the same system.

Desorption: The release or removal of an adsorbed material from the surface of a solid adsorbent.

Dewater: To remove water.

Dissolved Oxygen: Oxygen that exists in water as a result of air/water mixing or aquatic photosynthesis. Sufficient quantities of dissolved oxygen in water are required to support fish and most other aquatic animals.

Diversion: Removing water from its natural course or location, or controlling water in its natural course or location, by means of a ditch, canal flume, reservoir, bypass, pipeline, conduit, well, pump, or other structure or device.

Dolomitic Shale: Shale containing 5 to 50 percent of the mineral dolomite in the form of cement, crystals, and/or grains.

Dredging: Widening or deepening of water channel by removing sand, mud, silt, or gravel. Dredging can be accomplished using suction pumps or mechanical scrapers.

E

Effects/Impacts: NEPA Guidelines §1508.8 states:

"Effects" include:

- (a) Direct effects, which are caused by the action and occur at the same time and place.
- (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects on natural resources (and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.
- (c) Significant and potentially significant effects.

Emergent Channel Wetlands: The emergent channel wetlands in Ridges Basin are located along flowing watercourses such as Basin Creek, its major tributaries, and the major outlet drain in the irrigated area of the basin, as well as in nonflowing linear concavities within the sedge/rush meadow wetlands. These wetlands include the wetted channels, emergent vegetation in and along the channels, hydrophytic vegetation in linear concavities, and scattered willow thickets and occasional tamarisks, alders, and hawthorns. In general, the emergent channel wetlands are characterized by the following conditions:

1. A more or less linear configuration;
2. Topographically recessed (concave) position in the overall landscape;
3. Perennial or ephemeral streamflows may or may not support hydrophytic vegetation within the channel bottom; and
4. May or may not have a defined deep channel.

Emigrate: To migrate or move from one habitat to another.

Endangered Species Act: Federal law that authorizes and establishes the process for the protection of habitats and populations of species threatened with extinction. The stated purposes of the federal Endangered Species Act of 1973, as amended, are to provide conservation of the ecosystems upon which endangered and threatened species depend and to establish and implement a program to conserve these species.

Endangered Species: A species which is in danger of extinction throughout all or a significant portion of its range.

Enhancement: Actions that improve the quality of existing habitat beyond its original condition.

Entrainment: Process by which aquatic organisms, suspended in water, are pulled through a pump or other device.

Environment: All biological, chemical, and physical factors to which organisms are exposed.

Ephemeral Creek: A creek that carries water only during and immediately after rainfall or snowmelt.

Epilimnion: The warmer layer of water in a thermally stratified body of water that occurs from the surface down to the thermocline.

Escarpment: A cliff or steep slope that separates two level or gently sloping areas.

Ethnology: The science of dividing mankind into races and their origin, distribution, relations, and characteristics; analytical study of cultures.

Eutrophic: A body of water which has become, either naturally or by pollution, rich in nutrients and often seasonally deficient in dissolved oxygen.

Exchange: The release of water to a stream at one location in order to increase diversion at an upstream location, while still meeting downstream demands and bypass flow needs.

F

Fallow: To leave land unplanted after plowing.

Feasibility: Capable of being done or carried out.

Fingerling: A small fish up to one year old.

Fish and Wildlife Coordination Act: The Fish and Wildlife Coordination Act and related acts express the policy of Congress to protect the quality of the environment as it affects the conservation,

improvement, and enjoyment of fish and wildlife resources. Under this act, any federal agency that proposes to control or modify any body of water, or to issue a permit allowing control or modification of a body of water, must first consult with the U.S. Fish and Wildlife Service and State fish and game officials.

Flange: A rim for providing strength; for guiding or attaching to another object.

Floatable Flow: The flow rate below which a particular river-related recreation activity would cease.

Floodplain: Nearly level land, susceptible to floods, that forms the bottom of a valley.

Flow: The volume of water passing a given point per unit of time. The same as streamflow.

Flowage Easement: The right or easement to overflow, submerge, or flood certain lands; a right to prohibit building on certain floodways.

Flowage: Water that floods onto an adjacent land.

Footprint: An outline of defined boundaries or parameters.

Foreshore: The shore between the ordinary high- and low-watermarks and generally crossed by the tide each day.

Free-Flowing: Defined by Section 16(b) of the Wild and Scenic Rivers Act as existing or flowing in natural conditions without impoundment, diversion, straightening, riprapping, or other modifications of the waterway.

Fry: Life stage of fish between the egg and fingerling stages.

Full Irrigation Service Land: Irrigable land now receiving, or to receive, its sole and generally adequate water supply through facilities which have been or are to be constructed by, rehabilitated by, or replaced by Reclamation.

Geomorphology: The form or shape of the earth or landscape.

Groundwater: Water contained beneath the land surface of the earth that can be collected with wells, or drainage galleries, or water that flows naturally to the earth's surface via seeps or springs.

H

Habitat Unit: A numerical value derived from multiplying the index of suitable habitat for a given species by the size of the area available for that species. The habitat unit is a means of communicating the gains and losses in habitat resulting from the management activities and project implementation.

Heavy Metal: A metallic element of high atomic weight (greater than 45) with a density greater than 5 grams per cubic centimeter (that is, more than 5 times the density of water).

Historic Depletions: Also see depletion.

Hydric: Characterized by, or thriving in, an abundance of moisture.

Hydrogeochemistry: Chemistry of ground and surface waters.

Hydrograph: A graph showing, for a given point on a stream or conduit, the stage, velocity, flow or other property of water with respect to time.

Hydrography: Science that deals with the physical aspects of all waters on the earth's surface.

Hydrostatic Head: The height of a vertical column whose weight (measured by a cross-section unit) equals the hydrostatic pressure at a given point.

Hydrostatic Pressure: The pressure that water exerts at any given point in a body of water at rest.

Hypolimnion: The colder layer of water in a thermally stratified body of water that occurs from the lower end of the thermocline down to the bottom.

I

Igneous: Resulting from the intrusion or extrusion of magma or the activity of volcanoes.

Impervious: Not permeable; not allowing liquid to pass through.

Inactive Capacity: The reservoir capacity exclusive of and above the dead storage from which the stored water is normally not available because of the operating agreements or physical restrictions. Under normal conditions, such as a shortage of water or a requirement for structural repairs, water may be evacuated from this space (after obtaining proper authorization). The highest applicable water surface elevation described below usually determines the top of the inactive capacity.

Indicator Species: A species which can be used, through observation of its overall condition, to determine the general condition of other species within the same ecosystem.

Inflow: Water that flows into a body of water.

Instantaneous (Peak) Demand: P Peak Peak Peak daily Peak daily Peak daily amount Peak daily amount Peak daily amount needs. needs. needs. This needs. This needs. This is needs. This is needs. This is usually needs. This is usually needs. This is

Ion: An atom or molecule that has lost or gained one or more electrons.

Invertebrate: Animals lacking a spinal column.

Irretrievable Commitments of Natural Resources: Loss of production or use of resources as a result of a decision. It represents opportunities foregone for the period of time that a resource cannot be used.

Irreversible Commitments of Resources: Decisions affecting renewable resources such as soils, wetlands, and waterfowl habitat. Such decisions are considered irreversible because their implementation would affect a resource that has deteriorated to the point that renewal can occur only over a long period of time or at great expense, or because their use would cause the resource to be destroyed or removed.

L

Lacustrine Habitat: Lake and reservoir wetland habitat.

Lead Agency: NEPA Guidelines §1508.16 states:

"Lead agency" means the agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement."

Level of Service (LOS): A scale of measure for indicating intersection traffic flow rates based on volumes and capacities with LOS A having the highest capacity to volume ratio and LOS F having the lowest.

Limnological Conditions: Conditions on freshwater lakes.

Limnology: Study of freshwater lakes.

Lineament: A rectilinear topographic feature.

Loam: A soil consisting of a mixture of clay, silt, and sand.

Loess: A loamy (clay, silt, and sand) deposit deposited by wind.

M

Mainstem: The principal channel of the river.

Metamorphic: Having changed over time.

Methane Gas: A colorless, odorless flammable gas that is a product of decomposition of organic matter in marshes and mines or of the carbonization of coal.

Methylation: Addition of a methyl group to a compound.

Minimum Pool: The lowest volume of water maintained in a reservoir under normal operating parameters.

Mitigation: NEPA Guidelines §1508.20 states:

"Mitigation" includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

Montane: An area that is comprised of upland slopes and characterized by large evergreen trees.

Mortality: The rate or proportion of deaths.

Municipal and Industrial (M&I) Water: Water delivered to industries and cities for uses including human consumption, livestock and wildlife, recreation, and tourism development.

N

National Contaminant Biomonitoring Program 85th Percentile: The 85th percentile is an arbitrarily selected level used to compare data on fish residues; concentrations exceeding the 85th percentile are generally considered elevated although this level has no physiological or toxicological significance.

National Environmental Policy Act (NEPA): Directs federal agencies to prepare an Environmental Impact Statement for all major federal actions which may have a significant effect on the human environment. NEPA states that it is the goal of the federal government to use all practicable means, consistent with other considerations of national policy, to protect and enhance the quality of the environment. NEPA requires all federal agencies to consider the environmental impacts of their proposed actions during the planning and decision-making processes.

National Pollutant Discharge Elimination System (NPDES): A permit under Section 402 of the Clean Water Act (33 USC 1251 et seq.) may be required if water quality is potentially affected by proposed actions or construction of wastewater treatment plants or other structures. (See also Clean Water Act.)

No Action Alternative: Under NEPA, assumes that no federal action takes place.

Nonpoint Source Pollution: Man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water, originating from any source other than a point source.

Nutrients: Animal, vegetable, or mineral substances which sustain individual organisms and ecosystems.

O

Ostracods: Small freshwater species that have the body enclosed in a bivalve shell.

Opportunity Cost: The lost value (intrinsic, monetary, or otherwise) of foregoing an activity or option.

Overwinter: To remain in a particular habitat through the winter season.

Oxidation-Reduction Reaction: A chemical reaction in which the oxidation number (valence) of an element increases due to the loss of one or more electrons by that element. Oxidation of one element is accompanied by simultaneous reduction of the other reactant.

P

Paleocene: Relating to oldest series or epoch of the Tertiary period.

Palustrine Habitat: Marsh habitat.

Permian Era: Relating to the latest system (Paleozoic era) of rocks (period between 225 to 280 million years ago).

Pervious: Permeable; having openings that allow water to pass through.

pH: Indicator of acidity.

Pikeminnow: Formerly the Colorado squawfish, the Colorado pikeminnow (*Ptychocheilus lucius*) is an endangered fish that uses the stream tributaries to the mainstem Colorado River as a spawning ground.

Piscivorous: Fish that eat other fish.

Plan of Approach: Document prepared by Reclamation and EPA which outlines the approach to be taken in preparing the ALP Project DSEIS.

Play Hole: Whitewater kayaking term used to reference an eddy or backwater rapid that can be surfed or run for extended periods of time.

Point Source Pollution: Any discernible, confined, or discrete conveyance from which pollutants are or may be discharged, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft.

Private Whitewater User-Day: The participation in private whitewater recreation such as rafting or kayaking during a 24-hour period by one person.

Pumping: To draw water from a river.

Q

Quaternary Era: Period representing the present back three million years.

R

Recapture: Water diverted for reuse from runoff of agricultural fields.

Record of Decision (ROD): Per NEPA, a written document which states the decision made, describes the environmental factors considered, the preferred plan, and the alternatives considered in an environmental impact statement (EIS).

Recreation Day: Analogous to user day, which is the participation in a recreation activity at a given resource during a 24-hour period by one person.

Redd: The nest that a spawning female salmon digs in gravel to deposit her eggs.

Related Actions: As defined in 40 CFR 1508.25(a)(3), those actions that have similarities to a proposed action that provide a basis for evaluation together, such as common timing or geography.

Restoration/Revegetation: Reestablishing a habitat or plant community in an area that historically supported it.

Revetment: Materials (e.g., rock, riprap, or matting) or a structure placed to restrain underlying material from being transported away.

Revetted Bank: Shoreline protected by riprap.

Riffle: Stream habitat consisting of shallow turbulent water passing through or over stones or gravel of a fairly uniform size.

Riffle and Pool Complex: A water habitat composed of riffles (characterized by water flowing rapidly over a coarse substrate) and pools (deeper areas of water associated with riffles).

Riparian: Living on or adjacent to a water supply such as a riverbank, lake, or pond.

Riprap: Stones placed on the face of dams, stream banks, or other land surfaces to protect the surface from erosion.

Riverine: Relating to, formed by, or situated on a river.

Romer-Schoettler Process: Process initiated by then Colorado Governor Roy Romer and Lt. Governor Gail Schoettler whereby they covered both supporters and opponents of the ALP Project in an attempt to address unresolved issues regarding the 1996 Proposed Plan and gain consensus on an alternative to the original project.

Rough Fish: A non-sport fish.

S

Salmonids: The family of fish which includes trout, salmon, and char.

San Juan Recovery Implementation Program: A program called for in the 1991 Animas-La Plata Biological Opinion. The program is a cooperative effort among entities interested in the dual goals of endangered fish recovery and additional water development in the San Juan River Basin. Participants include: U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, Southern Ute Indian Tribe, Ute Mountain Ute Tribe, States of Colorado, Utah, and New Mexico, conservation interests, water management interests, and other entities.

Scoping: An early, open process for determining the scope of issues to be addressed and identifying the significant issues related to a proposed action.

Sedimentation: Soil or gravel transported by water from other streams and bodies of water that settle out of the water and are deposited in the stream channel.

Seep: A spot where groundwater emerges slowly to the surface, often forming a pool.

Seismotectonic: Of, relating to, or designating structural features of the earth which are associated with or revealed by earthquakes.

Sensitive Receptor: Defined in this DSEIS as residences for purposes of noise impact and public health and safety analyses

Shear Zone: An area where the rock mass has moved along the plane of contact which often becomes a channel for groundwater.

Siphon: A pipe connecting two canals.

Soil Cement: A mixture of water, cement, and natural soil, usually processed in a tumble and mixed to a specific consistency, then placed in lifts and rolled to compact.

Special-Status Species: Any species listed or proposed for listing under the federal Endangered Species Act.

Spillway: A passage for water to run over an obstruction, such as a dam.

Staff Hours: The amount of time required to perform a task or to be involved in an activity measured in hours.

Static Head: The difference in elevation between the pumping source and the point of delivery.

Stratigraphy: Geology that deals with the origin, composition, distribution, and succession of strata.

Streamflow: The volume of water passing a given point per unit of time.

Substrate: The base on which an organism lives; a substance acted upon.

Supplemental Irrigation Service Land: Irrigable land now receiving, or to receive, an additional or reregulated supply of water through facilities constructed by or to be constructed by Reclamation. This water, together with that obtained from non-project sources, generally will constitute an adequate supply.

Sunk Costs: Expenditures invested in an action that cannot be retrieved.

Supply (Water): An amount of water from a specified source.

Sustainability: Refers to the maintenance of a landscape and lifestyle in some agreed-upon form that includes both a space for human economic activity and a space to preserve the ecosystem under natural controls and evolution.

Swale: A wide, shallow ditch, usually grassed or paved.

T

Tertiary: Relating to the first period (Cenozoic) system of rocks, marked by the formation of high mountains.

Thalweg: The center line of a stream channel identified as being the deepest point of a given cross-section. The lowest contiguous (connected) flow in a stream would follow the thalweg.

Thermal Stratification: Distinct horizontal layers of water temperature forming in a body of water as a result of differential warming during late spring and summer.

Thermocline: In a thermally stratified body of water, a mid-depth zone of rapid temperature change located between the warmer epilimnion and the colder hypolimnion. Also known as the metalimnion.

Threatened: A legal classification for a species which is likely to become endangered within the foreseeable future.

Topography: Physical shape of the ground surface.

Total Dissolved Solids (TDS): Total amount of dissolved material, organic and inorganic, contained in water.

Toxin: Poisonous substance, generally from a plant or animal.

Trace Element: A trace element is one that is usually only present in "trace" or barely measurable amounts. When the name was developed, analytical chemistry was in its infancy and incapable of quantifying the amount or concentration of naturally occurring elements in soil or water other than the most common ones such as calcium, magnesium, sodium, potassium, chloride, carbon, and sulfur.

Tuff: A rock composed of volcanic materials.

Turbidity: The scattering and absorption of light that makes the water look murky. Caused by the content and shape of matter suspended in the water.

U

User-Day: The participation in a recreation activity at a given resource during a 24-hour period by one person.

V

Vertebrate: Animal species with a spinal column.

W

Water Acquisition Fund: A fund proposed under Refined Alternative 4 that the Colorado Ute Tribes could use to acquire private water rights on a willing buyer/willing seller basis. The funds could be used for on-farm development, water delivery infrastructure, or other economic development uses.

Water Management Plan: A plan developed during construction to help assure water quality compliance for both point and non-point pollution sources.

Weir: A structure built across an open stream channel for measuring or controlling water flow.

Wetlands: Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mud flats, and natural ponds. Classified as either Jurisdictional (subject to regulation under the Clean Water Act) or Nonjurisdictional (subject to consideration under the Fish and Wildlife Coordination Act).

Wetted Perimeter: The distance along the bottom and sides of a stream, creek, or channel in contact with the water.

Wild and Scenic Rivers Act (Public Law 90-542): The policy of this act selects certain rivers possessing remarkable scenic, recreational, geologic, fish and wildlife, historic, or other similar values, for preservation in free-flowing conditions. Those selected under recreational criteria may have undergone some diversion or impoundment in the past. Selected rivers and streams have been placed into the National Rivers Inventory by Acts of Congress; others are proposed for inclusion into the system.

Winters Doctrine: Provides that the establishment of an Indian Reservation reserves the amount of water necessary for the purposes of the reservation. Upheld by the U.S. Supreme Court.

Z

Zone of Influence: Area within the river valley that is influenced by the river's hydrology, both surface water and groundwater. In general, the river's riparian zone correlates with its zone of influence. The riparian zone is that area that supports riparian/wetland vegetation dependent on the hydrology and geomorphic processes of the river.